REMARKS

In response to the Final Office Action mailed June 12, 2007, Applicants respectfully request entry of this amendment. Claims 1-11 were previously pending in this application. By this amendment, claims 1, 3, 7-9 and 11 have been amended. As a result, claims 1-11 are pending for examination with claims 1, 7, 8 and 11 being independent. No new matter has been added.

Rejections under 35 U.S.C. §101

The Office Action rejected claims 8 and 10 under 35 U.S.C. 101 as allegedly directed to non-statutory subject matter. Applicants have amended claims 8 and 10 to address the Examiner's concerns.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

The Office Action rejected claims 1-11 under 35 U.S.C. 103(a) as being unpatentable over Nexus 5001 Forum: Standard for a Global Embedded Processor Debug Interface (The Nexus 5001 Forum), hereinafter "Nexus," in view of Argade et al., (U.S. Patent No. 5,724,505), hereinafter "Argade." Applicants respectfully disagree. In addition, while Applicants believe that claims as previously presented distinguished over a combination of Nexus and Argade, Applicants have amended claims 1, 3, 7-9 and 11 to further clarify the distinctions over the cited references.

A.   Claim 1

Claim 1, as amended, recites:

> A method for transmitting digital messages, on execution of an instruction sequence by a microprocessor, through output terminals of a monitoring circuit integrated on the microprocessor, at least one of said digital messages being representative of characteristic data stored by the monitoring circuit on detection of a jump in the execution of an instruction sequence from an initial instruction to a destination instruction different from an instruction following the initial instruction in the instruction sequence, the method comprising the steps of:

determining whether the jump is associated with a jump instruction of the instruction sequence for which data representative of a destination instruction address of the jump is explicitly indicated in the instruction;

if yes, *assigning a first value to a first set of bits of the at least one digital message to provide the at least one digital message comprising an explicit jump message*, and if not, *assigning a second value to the first set of bits to provide the at least one digital message comprising an implicit jump message*;

if the first set of bits is at the second value, *providing an additional field comprising a second set of bits of the at least one digital message comprising the implicit jump message*, and assigning to the second set of bits a third value identifying the jump from among several types of implicit jumps; and

transmitting the at least one digital message.

(Emphasis added).

On page 4, the Office Action concedes that Nexus does not disclose providing an additional field comprising a second set of bits of the at least digital message and assigning to the second set of bits a third value identifying the jump from among several types of jumps. The Office Action then states that Argade discloses "providing a field comprising a second set of bits of an at least one digital message and assigning to the second set of bits a third value identifying the jump from among several type of jumps." Argade discloses INSTR_TYPE signals from the processor core which indicate the type of each instruction executed. (Argade, col. 5, lines 39-41). By identifying an INSTR_TYPE as one of the three types of pre-defined discontinuities, the TBC block 50 may determine whether to record or to discard its corresponding address (or addresses) and whether additional information about the INSTR_TYPE needs to be recorded. (Argade, col. 5, lines 43-48).

The Office Action alleges that, in col. 6, lines 24-27, Argade discloses the signal that is a digital message. However, this portion of Argade discusses that **a multiplexer 56 combines the outputs of the address FIFO 52 and INSTR_TYPE FIFO 54** into **a single signal** which is transmitted to the JTAG interface 24 via the line 38. (Emphasis added). This is different from assigning a first value to a first set of bits of the at least one digital message to provide the at least one digital message comprising *an explicit jump message*, and assigning a second value to the first set of bits to provide the at least one digital message comprising *an implicit jump message*, as recited in claim 1. (Emphasis added). Argade does not teach or suggest a first set of bits of a digital message or a second set of bits of a digital message. Furthermore, Argade does not teach or suggest "if the first set of bits is at the second value, providing an additional field

comprising a second set of bits of the at least one digital message comprising the implicit jump message, and assigning to the second set of bits a third value identifying the jump from among several types of implicit jumps," as recited in claim 1.

On page 6, The Office Action discusses that Argade discloses that type_3 discontinuity does not need to record an address, which fits into Nexus "teaching of his program trace, direct branch message of Table 6-6, which does not have an address field." However, claim 1 recites that *if the first set of bits is at the second value, providing an additional field* comprising a second set of bits of the at least one digital message comprising *the implicit jump message*, and assigning to the second set of bits *a third value identifying the jump from among several types of implicit jumps*. (Emphasis added). Thus, the additional field of the implicit jump message, as compared to the explicit jump message, identifies a type of an implicit jump, rather than as address.

Accordingly, claim 1 patentably distinguishes over Nexus and Argade, either alone or in combination.

Claims 2-6 depend from claim 1 and are allowable for at least the same reasons.

Accordingly, withdrawal of the rejection of claims 1-6 is respectfully requested.

B.   <u>Claim 7</u>

Claim 7, as amended, recites:

> A device for transmitting digital messages between a monitoring circuit integrated on a microprocessor and an analysis tool via output terminals comprising:
> means of detection of a jump on execution of an instruction sequence by the microprocessor;
> means for storing data characteristic of the detected jump;
> *means for determining a digital message based on the stored characteristic data, the digital message comprising a first set of bits set to a first value if the jump is associated with a jump instruction of the instruction sequence for which data representative of a destination instruction address of the jump are explicitly indicated in the instruction, wherein the digital message comprises an explicit jump message, and the first set of bits set to a second value in the opposite case, wherein the digital message comprises an implicit jump message*; and
> means for transmitting the determined digital message;
> wherein, *when the first set of bits is set to the second value, the determination means is capable of providing an additional field in the implicit*

jump message comprising a second set of bits, with the second set of bits set to a
third value identifying the jump from among several jump types.
(Emphasis added).

On page 7, the Office Action concedes that Nexus does not disclose providing an
additional field comprising a second set of bits of the at least digital message and assigning to the
second set of bits a third value identifying the jump from among several types of jumps. As
discussed above, Argade does not disclose "when the first set of bits is set to the second value,
the determination means is capable of providing an additional field in the implicit jump message
comprising a second set of bits, with the second set of bits set to a third value identifying the
jump from among several jump types," as recited in claim 7.

Therefore, neither Nexus nor Argade teaches or suggests "a device for transmitting
digital messages between a monitoring circuit integrated on a microprocessor and an analysis
tool via output terminals comprising: means of detection of a jump on execution of an instruction
sequence by the microprocessor; means for storing data characteristic of the detected jump;
means for determining a digital message based on the stored characteristic data, the digital
message comprising a first set of bits set to a first value if the jump is associated with a jump
instruction of the instruction sequence for which data representative of a destination instruction
address of the jump are explicitly indicated in the instruction, wherein the digital message
comprises an explicit jump message, and the first set of bits set to a second value in the opposite
case, wherein the digital message comprises an implicit jump message; and means for
transmitting the determined digital message; wherein, when the first set of bits is set to the
second value, the determination means is capable of providing an additional field in the implicit
jump message comprising a second set of bits, with the second set of bits set to a third value
identifying the jump from among several jump types," as recited in claim 7.

Accordingly, claim 7 patentably distinguishes over Nexus and Argade, either alone or in
combination.

Accordingly, withdrawal of the rejection of claim 7 is respectfully requested.

C.   Claim 8

Claim 8, as amended, recites:

A method for transmitting digital messages on execution of an instruction sequence by a microprocessor, the method comprising:

detecting a jump in the execution of the instruction sequence from an initial instruction to a jump destination instruction, wherein the jump destination instruction is different from an instruction following the initial instruction in the instruction sequence;

if the jump is implicit, providing an additional field in at least one digital message to provide the at least one digital message comprising an implicit jump message transmitted on the execution of the instruction sequence by the microprocessor, wherein the additional field includes a value identifying a type of the implicit jump;

if the jump is not implicit, providing the at least one digital message comprising an explicit jump message; and

transmitting the at least one digital message.

(Emphasis added).

On page 11, the Office Action concedes that Nexus does not disclose providing an additional field comprising a second set of bits of the at least digital message and assigning to the second set of bits a third value identifying the jump from among several types of jumps. As discussed above, Argade does not teach or suggest "if the jump is implicit, providing an additional field in at least one digital message to provide the at least one digital message comprising an implicit jump message transmitted on the execution of the instruction sequence by the microprocessor, wherein the additional field includes a value identifying a type of the implicit jump; if the jump is not implicit, providing the at least one digital message comprising an explicit jump message," as recited in claim 8.

Accordingly, claim 8 patentably distinguishes over Nexus and Argade, either alone or in combination.

Claims 9 and 10 depend from claim 8 and are allowable for at least the same reasons.

Accordingly, withdrawal of the rejection of claims 8-10 is respectfully requested.

D.   <u>Claim 11</u>

Claim 11, as amended, recites:

A device for transmitting digital messages to monitor operation of a microprocessor, the device comprising:

a monitoring circuit integrated on a microprocessor for:

detecting, on execution of an instruction sequence by the microprocessor, a jump from an initial instruction to a jump destination

instruction, wherein the jump destination instruction is different from an instruction following the initial instruction in the instruction sequence;

if the jump is implicit, providing an additional field in at least one digital message to provide the at least one digital message comprising an implicit jump message transmitted on the execution of the instruction sequence by the microprocessor, wherein the additional field includes a value identifying a type of the implicit jump;

if the jump is not implicit, providing the at least one digital message comprising an explicit jump message; and

an analysis tool to reconstitute the instruction sequence based on the at least one digital message; and

at least one monitoring terminal to provide the at least one digital message from the monitoring circuit to the analysis tool.

(Emphasis added).

On page 11, the Office Action concedes that Nexus does not disclose, if the jump is implicit, providing an additional field in at least one digital message transmitted on the execution of the instruction sequence by the microprocessor, wherein the additional field includes a value identifying a type of the implicit jump. As discussed above, Argade does not teach or suggest "if the jump is implicit, providing an additional field in at least one digital message to provide the at least one digital message comprising an implicit jump message transmitted on the execution of the instruction sequence by the microprocessor, wherein the additional field includes a value identifying a type of the implicit jump; if the jump is not implicit, providing the at least one digital message comprising an explicit jump message," as recited in claim 11.

Accordingly, claim 11 patentably distinguishes over Nexus and Argade, either alone or in combination.

Accordingly, withdrawal of the rejection of claim 11 is respectfully requested.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: October 12, 2007   Respectfully submitted,
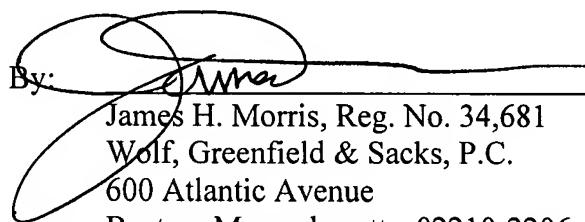
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